Department of the Navy

TREATY TIMES

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Captain's Corner

Captain Robert J. Vince

In prior issues of the Treaty Times, we have noted the extensive impact arms control agreements can have on the Department of the Navy (DON) and its operations. The focus of this issue is technology and the challenges that technological advances present for the U.S. with respect to the negotiation of, compliance with, and implementation of arms control agreements.

The U.S. withdrawal from the 1972 bilateral Anti-Ballistic Missile (ABM) Treaty between the U.S. and Russia is a notable example of unanticipated technological advancements impacting U.S. treaty commitments. On December 13, 2001, President Bush notified Russia of the U.S. intent to withdraw from the treaty, in accordance with the treaty provisions. This was the first time in recent history the U.S. has withdrawn from a major international arms control treaty. Recent advancements in technology coupled with changing international threats and the proliferation of missile technology profoundly influenced the U.S. decision to withdraw from the treaty in order to pursue such a system 30 years later.

Advancing technologies used by treaty partners could change our approach to Managed Access during treaty-allowed inspections. The Treaty on Open Skies (OS) allows for use of multiple sensors. Currently, the U.S. and other treaty partners only utilize film photography. However, OS does allow for use of digital photography, infrared sensors and Synthetic Aperture Radar (SAR) sensors. Russia is in the process of acquiring at least one new OS-dedicated aircraft. Russia has indicated that this new OS aircraft will employ SAR sensors. Although SAR has always been authorized by the treaty, the Russian aircraft could soon be the first to employ this technology during OS overflights. The specifications for the Russian SAR have not yet been shared. SAR technology has the ability to acquire imagery through cloud cover, foliage, and some structures.

In this issue of the Treaty Times, you will find articles that explore this change to OS aircraft sensors and also enhancements in technical equipment used for verification of the Chemical Weapons Convention. The U.S. will continue to comply with its treaty commitments, and the Naval Treaty Implementation Program (NTIP) will help the DON develop and employ managed access in order to meet those commitments without inadvertently disclosing classified information. Please see our articles for more information on how NTIP will continue to support Naval facilities as new sensors are employed.

Advancements in unmanned systems technologies are creating new classes of unmanned vehicles and systems in the water, in the air, and on land. The advances continue to generate weapon systems that defy easy categorization

SPECIAL POINTS OF INTEREST:

- **The Theme of this Newsletter is Technology in the Treaty World**
- **Spotlight Treaty: INF**

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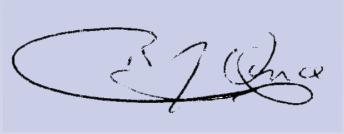
Inspecting Party Rights

into current declarations requiring determinations of whether a system is a missile, an airplane, a helicopter, or … a system indefinable within the current treaty structure. NTIP works with Program Managers and the Navy International Programs Office, as appropriate, to understand various treaty commitments and follow-on consequences of categorization and declarations by the U.S. and our international partners. Developing technologies, such as laser systems or space-based technologies, have the potential to cause implementation and compliance challenges and must be considered when the U.S. negotiates new or revised agreements.

NTIP works with DON R&D activities such as the Office of Naval Research, the Naval Research Laboratory, Warfare Centers and DON Program Managers to raise awareness of potential arms control impacts on developing defense technologies and how to best mitigate those risks. NTIP also works with the U.S. Intelligence Community to understand the impact of new verification technologies.

At NTIP, our focus is to stay abreast of technological advances so that we can continue to provide comprehensive arms control service to you.



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Compliance Assessment Program (CAP)

Technology in the Treaty World

The Compliance Assessment Program (CAP) within the Naval Treaty Implementation Program (NTIP), provides direct "no cost" assistance to Navy and Marine Corps Program Managers, Program Executive Offices, operational commanders, and those with program management responsibilities in meeting the Department of Navy international and domestic arms control obligations.

One of the challenges of forming and maintaining an effective arms control regime is anticipating and keeping up with advances in technology. It is difficult for policymakers and diplomats to predict changes and developments that could potentially weaken an arms control agreement, nullify its intended effect, or make it unnecessary. This was recognized as early as 1899, when the first Hague Peace Conference passed a declaration banning aerial bombing from balloons in wartime. The delegates to the Conference were concerned about the indiscriminate nature of an aerial bomb, but put a five-year limit on the ban in recognition that advances in technology could eventually provide for more accurate targeting.

Such foresight would have benefited the drafters of the Treaty of Versailles at the close of World War I. In an attempt to limit the power and range of the German Navy, the allies placed a 10,000-ton displacement limit on new ships. The intent of the limit was to keep the Germans from developing anything beyond small, coastal defense ships. However, innovations in welding techniques, new alloys, and lighter diesel engines allowed the German Navy to produce the lightweight *Deutschland* class ships that had formidable range and firepower. These "pocket battleships" proved to be a deadly sea force during World War II in spite of earlier treaty limitations. In this example, while this provision of the treaty was maintained, technology advancements occurring after entry into force superseded the "spirit and intent" of the treaty-mandated limitation.

Current technological advances continue to create challenges for arms control treaties and international agreements. Unanticipated platforms and new capabilities create gray areas where treaty application is not well defined.

- Unmanned Aircraft Systems (UAS) are not clearly defined by the provisions of the Treaty on Conventional Armed Forces in Europe (CFE). The treaty does limit the number of land-based combat aircraft in the area of application. However, it is unclear whether UASs are considered combat aircrafts under CFE. During CFE treaty negotiations the phrase "manned combat aircraft" was changed to "combat aircraft" to purposefully make the matter ambiguous. UASs were a developing technology at the time CFE was negotiated, and it was too early to determine how limiting their numbers in Europe would impact the CFE state parties.

- The UAS may also fall into a gray area under the Intermediate-Range Nuclear Forces Treaty (INF). INF places restrictions on ground-launched cruise missiles (GLCM) with a range of 500-5500 kilometers. UASs have technical and performance characteristics that differentiate them from the GLCMs eliminated by the INF Treaty. While many of the UAS vehicles fall within the range parameters, whether or not the unmanned vehicle is defined as a cruise missile and is therefore “captured” by the treaty, is uncertain.

- Recently developed laser-based optical warning distraction and incapacitation (OWDI) devices have created a small stir in the media. Operational forces on the ground in Iraq can use these devices to dissuade threatening vehicles from approaching checkpoints. However, OWDI consistently raises questions with regard to the Certain Conventional Weapons Convention (CCWC), Protocol IV and the associated U.S. DoD Policy on Blinding Lasers. These documents ban the employment of laser weapons with the sole combat function of causing permanent blindness to unenhanced vision. While the OWDI is only intended to cause temporary visual impairment and distraction, both the Protocol and the DoD Policy require that measures be taken, through training and doctrine, to prevent the incidence of accidental blinding by legitimate laser systems. The OWDI did not exist at the time when these documents first appeared, and “legitimate” laser systems were considered those used for detection, targeting, range-finding, communications, and other similar activities. Advances in OWDI technology is an example of technology advancing beyond the original objective and purpose of certain arms control regimes; thus underscoring why arms control compliance must be conducted early in program development and re-assessed at each milestone through out the programs/activities life cycle.

- The Outer Space Treaty has been challenged, especially by the Chinese and Russians, as being outdated because it does not address many of the space-based technologies and capabilities now possible in the military realm. Many analysts believe the recent targeting and destruction of a Chinese weather satellite by a Chinese missile was conducted to emphasize their belief that a new arms control agreement is needed for space. Whether or not a new treaty will emerge is still to be determined.

The Compliance Assessment Program will continue to support the DON in ensuring that all programs and activities comply with arms control treaties and agreements as currently constituted. If you have any questions with regard to a previous assessment or ensuring you fulfill your program management obligations and would like to have your program or activity assessed for arms control compliance at no cost, please contact ntip@ssp.navy.mil.

For further information or to schedule an arms control compliance brief for your office, please call us at 1-888-867-5880 or visit our website at www.ntip.navy.mil.

Chemical Weapons Convention (CWC)

Challenge Inspection Equipment

If a Chemical Weapons Convention (CWC) challenge inspection were to occur, inspectors from the Organization for the Prohibition of Chemical Weapons (OPCW) have the right to bring OPCW approved equipment necessary to fulfill CWC inspection requirements onto the inspected site. The CWC requires the OPCW to approve such equipment to ensure that safety considerations for all types of facilities at which such equipment is likely to be used are taken into account. The approved equipment remains in the custody of the OPCW Technical Secretariat and would be shipped to the designated Point of Entry of the inspected State Party. The United States, through the Department of Defense's (DoD) Technical Equipment Inspection (TEI) Program, has certified specific equipment items as being operationally safe for general use at U.S. facilities and activities, and as having capabilities limited to the purposes permitted by the CWC. The DoD then publishes a TEI Certification Report addressing the approved inspection equipment and identifying equipment that either does not meet treaty specifications or U.S. safety and environmental regulations. This TEI Certification Report is updated as required to reflect currently approved equipment.

Even after the DoD TEI inspectors have certified the inspection equipment, DON Commanding Officers retain the authority to determine whether OPCW approved equipment is safe for use and poses no security concerns at their particular base or at locations within a facility at the base. Using managed access, Commanding Officers can restrict, limit, or exclude the use of any OPCW inspection equipment item for safety and security reasons during a challenge inspection. This is a U.S. right under the CWC. To assist with this process, NTIP has created an interactive compact disk (CD) that contains general information, technical specifications, and operational parameters on all approved OPCW equipment. The CD is a valuable tool for DON Safety and Security Officers in certifying this permissibility at their specific base or facility during a challenge inspection. To obtain a copy of this CD, please contact NTIP at the number below.

For further assistance, please call us at 1-888-867-5880 or visit our website at www.ntip.navy.mil.

NTIP WEBSITE NOW ONLINE

The new NTIP public Web site was launched in May 2007. It will serve to raise awareness regarding the Department of Navy's arms control implementation and compliance efforts. Please visit the site at www.NTIP.navy.mil.

Treaty on Open Skies (OS)

New Russian Open Skies Aircraft

The United States government (USG) expects that in late 2007 the Russian Federation will certify a new aircraft for the conduct of missions pursuant to the Open Skies (OS) Treaty, the TU-214. There is some indication the Russians may eventually have three dedicated OS mission aircraft. The Russian Federation currently uses one TU-154 for both OS Treaty missions over the United Sates and in the Cosmonaut training program. (The Russians fly an AN-30 over Europe, but due to its limited range they do not use it in the U.S.) This constraint limits the number of overflights Russia can conduct over the United States. The certification of as many as three TU-214s may have a surprising impact on facility preparations for OS overflights.

- Russia's TU-154 is unable to reach the designated U.S. Points of Entry (POE), Dulles International Airport and Travis Air Force Base, without making an en route stop for fuel. Although they have used refueling airfields in Canada, the Russians have refueled at both Bangor, Maine and Anchorage , Alaska. The USG allows this under the stipulation that Russia provides a one week notice of their mission so that arrangements can be made for aircraft servicing. Since the new TU-214 will be capable of reaching the designated U.S. POEs without refueling, Russia will only be required to give the Treaty mandated 72 hours notice. Facilities will have less time to complete command impact assessments and initiate any local procedures or notifications. NTIP will always allow facilities at least 36 hours to complete impact assessments.

The new TU-214s will be well equipped with modern, yet treaty-compliant sensor suites. The new aircraft will employ digital photography capabilities. The USG believes that the new aircraft will employ synthetic aperture radar (SAR).

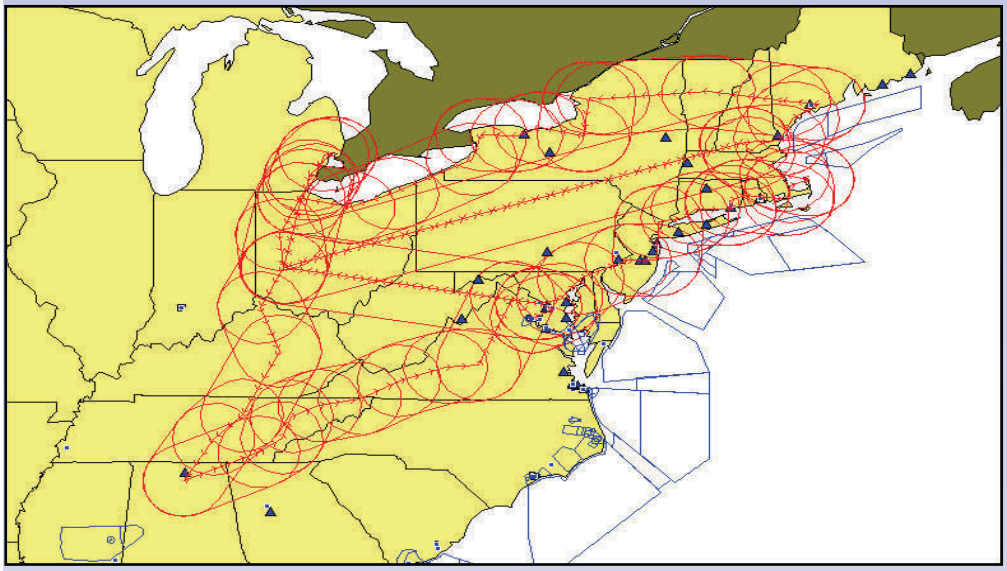
The following description is taken from the website of Sandia National Laboratories – "SAR systems take advantage of the long-range propagation characteristics of radar signals and the complex information processing capability of modern digital electronics to provide high resolution imagery. Synthetic aperture radar complements photographic and other optical imaging capabilities because of the minimum constraints on time-of-day and atmospheric conditions and because of the unique responses of terrain and cultural targets to radar frequencies. Synthetic aperture radars offer the capability for penetrating materials which are optically opaque, and thus not visible by optical or IR techniques. Low-frequency SARs may be used under certain conditions to penetrate foliage and even soil. This provides the capability for imaging targets normally hidden by trees, brush, and other ground cover. To obtain adequate foliage and soil penetration, SARs must operate at relatively low frequencies (10's of MHz to 1 GHz). Recent studies have shown that SAR may provide a limited capability for imaging selected underground targets, such as utility lines, arms caches, bunkers, mines, etc. Depth of penetration varies with soil conditions (moisture content, conductivity, etc.) and target size, but individual measurements have shown the capability for detecting 55-gallon drums and power lines at depths of several meters. In dry sand, penetration depths of 10's of meters are possible."

- Therefore, facilities may no longer be able to avoid a disclosure of sensitivities by shrouding equipment with a tarp or moving an aircraft inside a hangar. The exact capabilities of the TU-214's SAR are unknown at this time. NTIP will ensure that all DON commands are apprised as new information becomes available regarding the specific capabilities of sensors on the TU-214.
- This year the U.S. will be overflown by Russia four times. Russia is being overflown 42 times. In the future, this imbalance may change drastically. Russia and the United States have a Treaty right to overfly each other up to 21 times per year.

As always, NTIP will make information available to all interested facilities as it becomes known. If you feel that your facility is in need of Open Skies training, NTIP is available – at no cost to you – to provide Treaty specific training. Training is unclassified and can usually be accomplished in about an hour. Contact information for training is listed below.

Remember, if you have any questions or concerns about the Treaty on Open Skies don't hesitate to give NTIP a call at 1-888-867-5880 or visit our website at www.ntip.navy.mil.

March 2007 Russian Passive Mission Overflight Map



Top 10 RESPONDERS

March 2007

RUSSIAN PASSIVE MISSION

051500

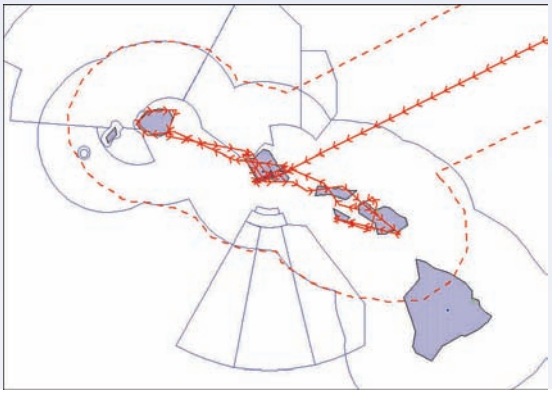
1. NAWC/NAWS CHINA LAKE
2. COMNAVREG SW
3. NUWC KEYPORT
4. NAWC AC DIV/NAES LAKEHURST
5. COMSEALOGLANT
6. FACSFAC JACKSONVILLE
7. NAVSHPYD AND IMF PUGET SOUND
8. COMUSFLTFORCOM NORFOLK
9. COMNAVREG MIDLANT
10. NAVWPNSTA SEAL BEACH AND DET CONCORD

May 2007 Russian Passive Mission Overflight Map

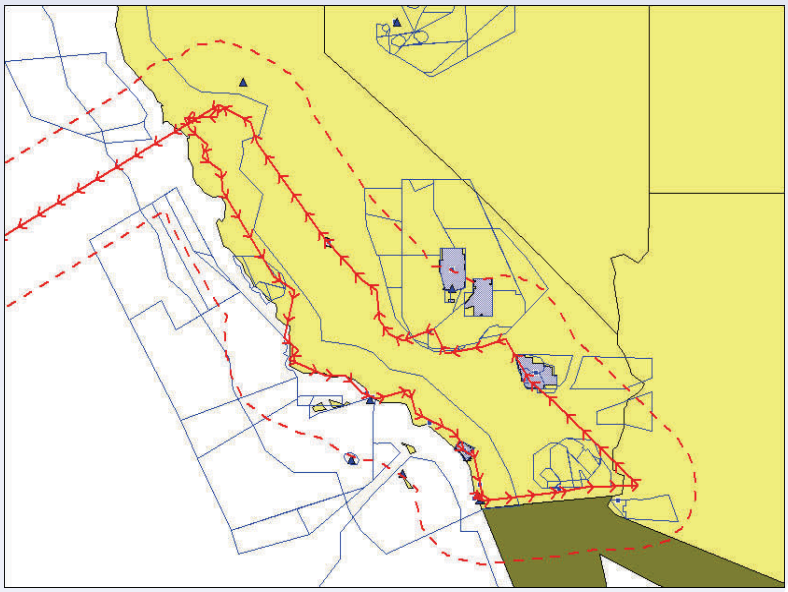
TOP 10 RESPONDERS MAY 2007 RUSSIAN PASSIVE MISSION 181545

1. NAS PATUXENT RIVER
2. NUWC KEYPORT
3. NSWMSC WEST
4. COMNAVREG SW
5. NAS OCEANA AIR DET
6. NAVSTA EVERETT
7. NAWC/NAWS CHINA LAKE
8. NAS WHIDBEY ISLAND
9. NSWC WHITE SANDS
10. SUPSHIP GULF COAST

Hawaii



Southern California



Spotlight on:

Intermediate-Range Nuclear Forces (INF) Treaty

The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles (INF) eliminated an entire class of U.S. and Soviet nuclear and conventional ground-launched ballistic and cruise missiles with ranges of 500-5500 km (270-2979 nm). Entering into force on 1 June 1988, INF resulted in the elimination by May 1991 of 846 U.S. INF-range missile systems, including the modernized Pershing II, and 1846 Soviet INF Treaty-range missile systems, including all SS-12, SS-20 and SS-23 ground-mobile systems. After the collapse of the Soviet Union, by amendment, the parties to this Treaty became the United States, the Russian Federation, Belarus, Kazakhstan, and Ukraine.

INF prohibits the Treaty Parties from producing, possessing and flight-testing shorter-range (500 km to 1000 km) and intermediate-range (over 1000 km to 5500 km) ground-launched ballistic missiles (GLBMs) and ground-launched cruise missiles (GLCMs) that are weapon-delivery vehicles, the stages of such missiles, or launchers for such missiles. INF further stipulates that, if a ballistic missile or cruise missile has been flight tested or deployed for weapon delivery, all missiles of that type shall be considered to be weapon delivery vehicles. The U.S. Government position is that the "parties share a common understanding that the Treaty does not cover non-weapon delivery vehicles" (Note of the Government of the United States to the Government of the USSR, 12 May 1988). Each Party remains obligated to observe these prohibitions and stipulations unless or until it withdraws from the Treaty.

Since INF entry-into-force (EIF), U.S. efforts regarding shorter- and intermediate-range missiles have focused on deployment of air- and sea-launched systems. Air-launched systems include the AGM-86 series cruise missile and the AGM-129 Advanced Cruise Missile (ACM), both of which are launched from B-52H bombers; and, the Joint Air-to-Surface Standoff Missile (JASSM), intended for both B-52H and F-16C/D aircraft. The BGM-109 Tomahawk cruise missile remains the main component of U.S. medium- to intermediate-range sea-launched systems. More recently, consideration has been given to development and eventual deployment of new types of submarine-launched intermediate-range ballistic missiles.

None of the U.S. shorter-to-intermediate range systems listed above is, or would be, subject to INF, provided: 1) no versions are, or shall be, deployed as ground-launched ballistic or cruise missile systems; and, 2) the United States observes the requirements in Article VII of INF. This Article states that a ballistic missile or cruise missile which is not a missile to be used in a ground-based mode shall not be considered to be a ground-launched ballistic or ground-launched cruise missile *if it is test-launched at a test site from a fixed land-based launcher which is used solely for test purposes and which is distinguishable from* GLBM launchers (in this case, Pershing II launchers) and GLCM launchers (e.g. BGM-109 ground-based launchers). This provision permits ground-based testing of missiles intended for air- or sea-launch that might otherwise be considered to be prohib-

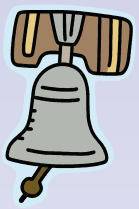
ited by INF. These missiles cannot be deployed in a ground-based mode at some future date without violating INF.

From time to time, issues have been raised about whether land-based shorter- or intermediate-range unmanned aerial systems capable of delivering a weapons payload are subject to INF. Aircraft-like unmanned aerial systems such as Predator, J-UCAS (N-UCAS) and unmanned systems with similar engineering characteristics are not reasonably subject to this Treaty as "ground-launched cruise missiles" for the following reasons: 1) although these systems sustain flight through the use of aerodynamic lift and are weapon delivery vehicles, they do not have missile airframes or missile stages; and 2) they do not make use of a launcher, but take off and land like an airplane.

This complex relationship between new technologies and the 20-year old INF Treaty highlights the need to have your program assessed by NTIP's Compliance Assessment Program. It is especially important to receive the required arms control treaty compliance certification for any activities involving unmanned or missile systems with ranges greater than 500 km.

Attention on Deck

The Russians will be overflying the U.S. two more times this year. Will your facility make the Top 10 Responders list? How do you avoid the Bottom 10 Responders list? Who is your Open Skies POC? Who responds to Open Skies Messages for your facility? For answers and assistance with these questions, please call us at 703-601-9646 (DSN 329).



Glossary and Acronyms

ATC - Air Traffic Controller

CAP – Compliance Assessment Program

CD - Compact Disk

CFE– Conventional Armed Forces Europe

CWC – Chemical Weapons Convention

DoD – Department of Defense

DON - Department of the Navy

GLBM – Ground-Launched Ballistic Missile

GLCM – Ground-Launched Cruise Missile

INF - Intermediate-Range Nuclear Forces

MOU - Memorandum of Understanding

NTIP - Naval Treaty Implementation Program

OPCW – Organization for the Prohibition of Chemical Weapons

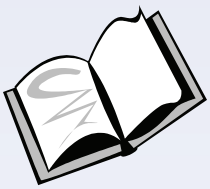
OS – Treaty on Open Skies

OWDI - Optical Warning Distraction and Incapacitation

POC – Point of Contact

POE– Point of Entry

R&D - Research & Development



SAR–Synthetic Aperture Radar

TEI–Technical Equipment Inspection

UAS - Unmanned Aircraft Systems

USG – United States Government

OPEN SKIES POC OF THE QUARTER

IN RECOGNITION OF THE HARD WORK AND DEDICATION TO THE OPEN SKIES MISSION

IT1 Rachel Taylor

WPNSTA Earle, Colts Neck NJ

BRAVO ZULU = GREAT JOB!!

BRAVO ZULU to those Open Skies Points of Contact who recently hosted Open Skies Training at their facilities: Dr. Beck, NOTU; Ron Perry, CBC Gulfport; ACC Gooch, NAS JRB New Orleans; IT1 Taylor, WPNSTA Earle; Diane Bates, NAWC Lakehurst; Mr. Slack, NAVSUPPACT Philadelphia; Mr. Zynski, NAVSUPPACT Mechanicsburg; SSGT Green, CG MCB Quantico; Mr. Martinez, NSWC White Sands; and MSGT Hendricks, MCAS Yuma.

BRAVO ZULU to ACCS Kelly Smith for coordinating NTIP's Open Skies presentation to the ATC Managers Course at NAS Pensacola.

BRAVO ZULU to all the men and women of Naval Support Activity South Potomac and participating operational tenant commands, including Naval Surface Warfare Center Dahlgren, the Joint Warfare Analysis Center (JWAC), and the Air Force 20th Space Control Squadron Detachment 1, for your exceptional support during this year's Department of the Navy (DON) Chemical Weapons Convention Challenge Inspection Training Exercise.

All facility personnel involved in the exercise, which ran from 10-11 May and 14-17 May 2007, were instrumental in assisting the Department evaluate all key aspects of its challenge inspection response methodology, including the coordination process between the applicable DON base installation command under Commander Navy Installations Command and operational tenant commands. These exercises are critical to DON readiness and its implementation and compliance responsibilities with U.S. Arms Control policies. The data and lessons learned collected during this year's exercise will be extremely valuable to all Navy and Marine Corps installations and operational commands worldwide. Once again, congratulations on a job well done. BRAVO ZULU!!!

Feedback

How are we doing? Is there something you would like to see in the next issue? We appreciate any comments or suggestions you may have.

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- Command Name
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- Commanding Officer Phone Number
- Treaty Point-of-Contact (POC) Name
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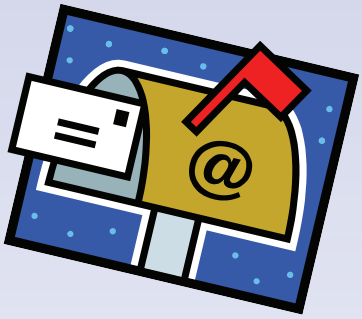
- POC Phone Number

You can contact us at 301-744-4206 (DSN 354).



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